



ARTEMIS I

EXPLORATION GROUND SYSTEMS (EGS)

A Case for Small Business



OFFICE OF **SMALL BUSINESS** PROGRAMS
...where small business makes a **BIG** difference





NASA completed the design certification review (DCR) for the Space Launch System Program (SLS) rocket ahead of the Artemis I mission to send the Orion spacecraft to the Moon. This close-up view shows the SLS rocket for Artemis I inside High Bay 3 of the Vehicle Assembly Building (VAB) at NASA's Kennedy Space Center in Florida on September 20, 2021. Inside the VAB, the rocket completed the umbilical retract and release test and the integrated modal test. With the completion of the SLS design, NASA has now certified the SLS and Orion spacecraft designs, as well as the new Launch Control Center at Kennedy for the Artemis I mission.

Credits: NASA/Frank Michaux.

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NASA's Space Launch System (SLS) rocket soars to space in this artist concept depicting the Block 1 crew vehicle configuration launching to space. SLS will be the most powerful and capable rocket ever built for deep space missions. The first SLS mission—Artemis I—launched an uncrewed Orion spacecraft to an orbit beyond the Moon and brought it back to Earth to demonstrate the integrated system performance of the SLS rocket and Orion spacecraft's re-entry and landing prior to a crewed flight.

Image credit: NASA/MSFC

OFFICE OF SMALL BUSINESS PROGRAMS

Mission Statement

MISSION STATEMENT

The mission of the NASA Office of Small Business Programs is to promote and integrate small businesses into the industrial base of contractors and subcontractors that support the future of space exploration, scientific discovery, and aeronautics research.

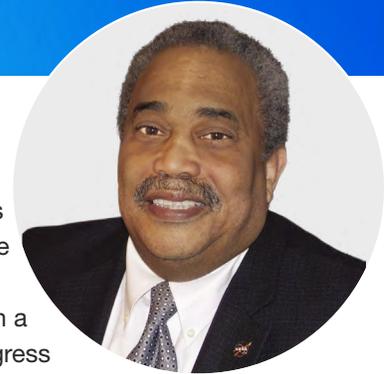
NASA astronaut Nicole Mann gives a thumbs up from inside the Orion mockup, Wednesday, July 10, 2019 at NASA's Johnson Space Center in Houston, Texas.

Photo Credit: (NASA/Bill Ingalls)

MESSAGE FROM THE

Office of Small Business Programs

Associate Administrator



On behalf of the NASA Office of Small Business Programs (OSBP), I am pleased to announce the newest addition of the publication series “A Case for Small Business: Artemis I: Exploration Ground Systems (EGS) which highlights the astounding accomplishments and extraordinary efforts of over 800 small businesses located across 43 states that have contributed to this mission. On November 16, 2022, at 1:47 a.m., while most people were deep in their slumber, NASA was busy launching the Artemis I test mission to the Moon! The nighttime launch of the Space Launch System (SLS) rocket was a stunning site to see! OSBP would like to take a moment to recognize the incredible efforts made by small businesses that helped get us to this point. Small businesses have permeated every component of Artemis I, covering the Space Launch System (SLS), Orion Capsule, and Exploration Ground Systems (EGS).

Several companies introduced in this publication are just a microcosm of the countless high-tech firms that enable NASA to complete its various missions. They are true champions for fostering innovation and pioneers for the future of space exploration, scientific discovery, and aeronautics research. They have provided an array of products and services to support the Artemis I mission. Many aspects of the capsule, from module integration and testing, quality analysis, supply chain planning, project proposal phase, and ground systems data configuration have been successfully completed by small business contractors and subcontractors. These businesses were able to perform under rigorous standards and due to their success, witnessed substantial growth in revenue, personnel, and organizational capabilities.

It's evident that small business has a far reach at NASA. They can perform just about any task that is presented to them and produce high quality results while doing it. As we look ahead toward the future

launches of Artemis II and Artemis III, we can be sure small business will remain a cornerstone of progress for America's return to the Moon!

My team and I could not achieve success without backing from senior leadership. OSBP has significant support from the Agency's Senior Management, the NASA Mission Directorates, acquisition personnel, and the mission support offices. I would like to specifically recognize NASA Administrator Bill Nelson for his ongoing commitment to the program. In addition, I would also like to thank Ms. Pam Melroy, Deputy Administrator; Mr. Robert Cabana, Associate Administrator; the Office of Procurement; the Center Directors; and the Procurement Officers located at each of the Centers.

In closing, I want to thank the companies included in this publication and other small businesses that support NASA every day in various capacities that enable the Agency to be successful. Without their dedication, NASA would not be able to accomplish its robust missions. I hope this publication inspires additional small businesses to learn that they can support NASA in its upcoming missions.

NASA is an agency “Where Small Business Makes a Big Difference.”

A handwritten signature in black ink that reads "Glenn A. Delgado".

Glenn A. Delgado
Associate Administrator
NASA Office of Small Business Programs

The SLS core stage is the tallest and most powerful rocket stage NASA has ever built. It measures approximately 212 feet tall and 27.6 feet in diameter.

The SLS core stage for the Artemis 1 mission was rotated vertical in January for installation into the B-2 test stand at NASA's Stennis Space Center in southern Mississippi. Credit: NASA/SSC





**Small
Business Making
a BIG Difference!**

**NASA awarded small
business Axiom Space
a \$228.5M contact to
deliver spacesuits
for the Artemis III
mission.**

Navy divers from Explosive Ordnance Disposal (EOD) Expeditionary Support Unit 1, practice recovering a mock Orion capsule during Day 2 of Underway Recovery Test 9 (URT-9) aboard the USS John P. Murtha. During the week-long test, NASA's Landing and Recovery team performed their final mission certification ahead of Artemis I.

Credits: NASA/Frank Michaux.



Top: After four months of rigorous testing in the world's premier space environments simulation facility at NASA's Plum Brook Station, the Orion spacecraft for the Artemis I mission is certified and another step toward being ready for flight.

Bottom: The core stage of the Space Launch System (SLS) rocket for NASA's Artemis I mission has been placed on the mobile launcher in between the twin solid rocket boosters inside the Vehicle Assembly Building (VAB) at NASA's Kennedy Space Center.



OVERVIEW OF THE Artemis I: EGS Mission

The Exploration Ground Systems Program (EGS) is one of three NASA programs based at NASA's Kennedy Space Center in Florida. EGS was established to develop and operate the systems and facilities necessary to process and launch rockets and spacecraft during assembly, transport, and launch. EGS's mission is to transform the Center from a historically government-only launch complex to a spaceport that can handle several different kinds of spacecraft and rockets—both government and commercial.

Unlike previous work focusing on a single kind of launch vehicle, such as the Saturn V or Space Shuttle, EGS is preparing the infrastructure to support several different kinds of spacecraft and rockets that are in development, including NASA's Space Launch System (SLS) rocket and Orion spacecraft for [Artemis I](#). A key aspect of the program's approach to long-term sustainability and affordability is to make processing and launch infrastructure available to commercial and other government customers, thereby distributing the cost among multiple users and reducing the cost of access to space.

To meet this challenge, EGS is upgrading Launch Pad 39B, the crawler-transporters, the Vehicle Assembly Building (VAB), the Launch Control Center's Young-Crippen Firing Room 1 and mobile launcher (ML), and other facilities.



Returning from the Moon, Orion's round heat shield reached temperatures of nearly 5,000°F when the spacecraft entered Earth's atmosphere!

SMALL BUSINESS CONTRIBUTIONS

to the Artemis Mission

As NASA began to take its next steps toward revisiting the Moon with the Artemis I test mission, we want to take a moment to recognize the incredible efforts made by small businesses that helped get us to this point. Small businesses have permeated every component of Artemis I, covering the Space Launch System (SLS), Orion Capsule, and Exploration Ground Systems (EGS). The goal of landing on another celestial body doesn't come easy, and it cannot be done without the partnership between NASA and American small businesses. Let's take a trip down each component and learn how small businesses have contributed to it.

Building one of the largest rockets in the world requires all hands on deck, and our small businesses have gone above and beyond to make SLS a reality. For example, SLS's core stage will be using a mix of refurbished and newly built RS-25 engines, which are engines that propelled the Space Shuttle. Small businesses have helped with retooling of equipment, manufacturing, and processing to ensure the engines meet a high degree of operability for flight on Artemis I. This also applies to the two solid rocket boosters and abort system thrusters, as small businesses served as important subcontractors on the project.



On November 20, 2022, the fifth day of the 25.5-day Artemis I mission, a camera mounted on the tip of one of Orion's solar array wings captured this footage of the spacecraft and the Moon as Orion continued to fly nearer to our lunar neighbor.

The Orion capsule, which on Artemis I performed a practice flyby of the Moon, is also heavily supported by small businesses. Many aspects of the capsule, from module integration and testing, quality analysis, supply chain planning, project proposal phase, and ground systems data configuration have been successfully completed by many small business contractors and subcontractors. This list could go on for much longer, as these businesses touched virtually all parts of Orion in some way.

To get SLS and Orion off the ground, NASA had to place large investments into facilities and structures to better accommodate an increasing launch cadence and various types of government and commercial launch vehicles. The Exploration and Ground Systems (EGS) program has allowed more infrastructure to be built at NASA's Kennedy Space Center and has opened the door for small businesses to contribute to these systems. Data tracking, communication systems, and even the Mobile Launcher 2 (ML2), the launch platform for SLS Block 1B and Block 2 configurations, have small business written all over it.

It's evident that small business has a far reach at NASA. They can perform just about any task that is presented to them and produce high quality results while doing it. As we look ahead toward future launches of Artemis II and Artemis III, we can be sure small business will remain a cornerstone of progress for America's return to the Moon! Next, we will take a detailed look at some of the businesses that contributed to Artemis I.



Top: NASA's Pegasus Barge arrives at the Launch Complex 39 turn basin wharf at Kennedy Space Center in Florida to make its first delivery to Kennedy in support of the Agency's Artemis missions.

Photo credit: NASA/Mike Downs



Left: A model of NASA's Orion spacecraft glides to a successful touchdown during a test of its parachute system. Orion's three main parachutes, which slow it gradually down for landing, weigh 300 pounds each and can cover almost an entire football field.

NASA's Space Launch System (SLS) rocket with the Orion spacecraft aboard is seen atop the mobile launcher at Launch Pad 39B, Tuesday, August 30, 2022, at NASA's Kennedy Space Center in Florida.

Credits: NASA/Joel Kowsky

A photograph of the NASA Space Launch System (SLS) rocket with the Orion spacecraft aboard, mounted on the mobile launcher at Launch Pad 39B. The rocket is the central focus, featuring a large orange core stage and two white boosters. The Orion spacecraft is visible at the top. The rocket is surrounded by a complex metal structure of scaffolding and support beams. The background is a blue sky with scattered white clouds.

The SLS core stage is designed to operate for the roughly eight-minute Artemis I launch and ascent to Earth orbit, reaching speeds of faster than 17,500 mph, or nearly 23 times the speed of sound (Mach 23), and more than 530,000 feet in altitude before it separates from the ICPS, Orion stage adapter, and Orion spacecraft.

ARTEMIS I INDUSTRY PARTNERS

AVATAR TECHNOLOGIES, INC.

Avatar Technologies, Inc. (Avatar), an Economically Disadvantaged Woman-Owned Small Business (EDWOSB) and Small Disadvantaged Business (SDB) headquartered in Greenbelt, Maryland, has continuously supported the NASA Kennedy Space Center's Exploration Ground Systems mission since 2009. Mainly focused on complex systems engineering, program management, technology integration, and software development, Avatar is currently a subcontractor to Jacobs Technology on Test and Operations Support Contract (TOSC). Avatar systems engineers support mechanical and electrical implementation of ground systems capabilities, flight hardware processing, and launch operations for Artemis and commercial crew missions. Moreover, Avatar IT PMs support the Launch Control Center's (LCC) software modification, design, development, integration, debugging and near operational simulation testing, including the recent Artemis I joint countdown simulation.

Prior to joining the TOSC team, Avatar was a subcontractor on both the KSC Exploration Ground Systems (EGS) Program Office (LX) Support Services [KLXS] I and II contracts. Company engineers performed concept of operations development, requirements management, ground systems integration, validation and verification testing, integrated schedule analysis, configuration management, and budget planning for KSC's new and legacy ground systems and facilities. Avatar participated in integrated systems development cycles to prepare the LCC, Vertical Assembly Building (VAB), Multi-Payload Processing Facility (MPPF), Launch Pad 39B, Mobile Launcher (ML) and other critical ground support infrastructure to help realize the Center Director's "multi-user spaceport" vision. For example, the Avatar team helped develop the early end-to-end operational concept for ground systems interfacing with SLS, Orion and commercial customers to develop robust user-based requirements and ultimately share infrastructure and maintenance costs.

CIMARRON SOFTWARE SERVICES, INC.

Working closely with Bechtel NS&E, Cimarron has developed a strong and productive relationship on the Mobile Launcher 2 (ML2) project. Significant contributions have been in the areas of IT (Windchill Development and Administration), Systems Engineering, CREO/Design Engineering, Quality, and Civil Structure engineering. Cimarron personnel provide key inputs to critical sub-systems on ML2 and have led design reviews for the project and NASA customer. Over the past three years Cimarron's scope has doubled, which demonstrates the company's ability to garner skilled support to Bechtel and NASA.

Cimarron's support and contributions in Systems Engineering/Human Factors Engineering has been critical to the success of the design reviews and completion of all subsystems that will support the ML2 and Artemis SLS vehicle for launch. The design engineering team brought expertise in pipe, panel, structures, and cryogenic systems used on NASA spaceflight hardware for successful completion of designs and will prepare ML2 for assembly, testing, and commissioning of the mobile launcher.

Cimarron's significant contribution was gathering requirements and installation of the Windchill PTC system from the start-up of the project and integration with the various project IT systems. Cimarron was chosen for

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ARTEMIS I INDUSTRY PARTNERS

this critical position due to its expertise in this area and that the company was the architect of the KDDMS System for NASA at KSC. The Windchill PTC system houses all critical documentation for the design, build, and commissioning of the mobile launcher through projects lifecycle. This system also allows project and NASA personnel quick access for reviews and inquiries quickly and efficiently.

CRAIG TECHNOLOGIES

Craig Technologies engineers and technicians provided Exploration Ground Systems (EGS) support to the following efforts: Hardware and network engineers responsible for Launch Control Center (LCC) rebuild, ground wiring harness fabrication (5K+), design and testing support for 13 umbilical systems, software developers responsible for linking the LCC firing room to the launch pad.

Craig delivered fabricated and build components in support of the Electrical Ground Support Equipment (EGSE), Hazardous Gas Leak Detection System (HGLDS), Orion Service Module Umbilical (OSMU), and Mass Spectrometer Leak Detection System (MSLDS) subsystems.

Craig supported the design and installation of the Vehicle Motion Simulator, Hazardous Gas Detection and Flame Detection Systems, Cryogenic Liquid Flow System, Ground Support Equipment Integration Test Bed, and Fluid Component Water Flow Test System.

Craig provided Ground Coolant System design engineering expertise, including design, acquisition, fabrication, testing, installation, and verification & validation. Tasks include designing Ground Coolant System Ground Support Equipment for the SLS Orion service module.

Craig provided QC Inspectors, configuration management, and environmental and safety support across all programs/projects. This support occurred using both government and company facilities.

Craig Technologies also provided support to Mobil Launcher 1 to include wire harness fabrication, fluid systems design and support (cryogenic and hypergolic), and power/programmable Logic controllers/fluids enclosures (cabinets) design and build

Craig engineers designed the crew access arm on the Mobile Launcher used to access the Orion spacecraft atop the Space Launch System (SLS) rocket.

INSIGHT GLOBAL

Insight Global is an Engineering Services company that provides unique talent solutions through staff augmentation, professional and managed services, direct-hire, and surge support both pre- and post-award. Insight Global began support of the EGS mission in December 2017 when they were brought on to help with a large surge need for NASA. The team had been struggling with design engineering efforts for the launch pad

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ARTEMIS I INDUSTRY PARTNERS

and Mobile Launcher supporting the Artemis mission. Insight Global was able to build a “program- specific” solution comprised of the most qualified senior recruiters from around the country to help fill hundreds of open positions for the prime. Insight Global handled all screening, final interviews, and onboarding, which alleviated hours of hiring managers’ time. Insight Global’s initial surge efforts resulted in successfully onboarding more than 200 resources within a three-month window; hitting every single deadline given by the prime. They provided skillsets such as Build Engineers, Electrical and Mechanical Design, Fluids Design, System Test, Structural Engineers, and more. As a subcontractor, Insight Global worked closely with the prime on a daily basis to truly understand the skillsets, mission, and culture. They were able to understand the program’s pain points and be flexible with their solutions-based approach. By March 2018, Insight Global’s total surge efforts resulted in onboarding 426 contract employees and 25 direct hire employees. As a result, Insight Global’s engineering staff directly contributed to the realignment of the Mobile Launcher and launch pad design schedule and greater Artemis mission lifecycle, leading to future mission success.

PROXOPS, LCC

ProXopS supports multiple functional areas that include the command and control group, configuration management of the ground support equipment, and IT Shared Services.

SUMMIT TECHNOLOGIES & SOLUTIONS, INC.

Summit provides support in troubleshooting electrical and control systems, including Programmable Logic Controllers (PLC’s), human machine Interfaces (HMI) Panel View displays, and software development as well as RXLogix 5000 and/or Studio 5000 Logix Designer and Factory Talk View ME/SE. Summit provides logistics support, including analysis of designs for parts needed to perform maintenance; manages assigned systems from a logistics supportability perspective to ensure proper spares are on hand when needed during operations; works with Project Management to ensure on-time delivery of materials in support of projects; and defines requirements for materials to be purchased. In addition, Summit provides IT Programming support with specific duties that include the following: system administration, system architecture development, application development, IT security technical aspects, and IT Specialist functions; assists with writing, reviewing, and modifying computer software; assists with encoding, testing, debugging, and documenting programs; and analyzes designs for parts needed to perform maintenance. Summit provides engineering support to the VAB as well as other subsystems bringing their product to the level required to meet certification for transfer over to operations.

SUPPORTING SMALL BUSINESSES

at a Glance

4D Technology	Tucson, AZ	Glenair, inc.	Glendale, CA
ACDA InterCorp	Deerfield Beach FL	Global Science & Technology, inc.	Greenbelt, MD
Acute Technological Services, inc.	Houston, TX	Global Scientific Technology, inc.	Honolulu, HI
ADNET Systems, inc.	Bethesda, MD	Hexcel	Salt Lake City, UT
Advocate in Manpower Management, Inc.	Palm City, FL	Hextek Corporation	Tucson, AZ
Aero-Space Tooling and Machining	Salt Lake City, UT	Honeywell	Phoenix, AZ
Aerofit, LLC	Fullerton, CA	Indium Corporation	Utica, NY
Agilent Technology, inc.	Santa Clara, CA	ION Corp.	Eden Prairie, MN
Air Mobility Command	Scott Air Force Base, IL	Jackson & Tull	Greenbelt, MD
Alliance Spacesystems, LLC	Los Alamitos, CA	Janis Research Company, LLC	Woburn, MA
Appli-Tec, inc.	Salem, NH	Jar Machine & Fabrication	Azusa, CA
Arconic	Torrance, CA	Johns Hopkins University	Baltimore, MD
Arizona State University	Tempe, AZ	JPW Structural Contracting, Inc.	Syracuse, NY
ASRC Federal	Beltsville, MD	KBRWyle	Greenbelt, MD
ASRC Federal Inuteq	Beltsville, MD	Keithley Instruments, A Tektronix Company	Cleveland, OH
ASRC HQ	Barrow, AK	Kepeco Inc.	Flushing Queens, NY
ATA Engineering, inc.	San Diego, CA	L3Harris Technologies	Rochester, NY
BAE Systems, inc.	Manassas, VA	LA Gauge Company	Sun Valley, CA
Ball Aerospace	Boulder, CO	Lake Shore Cryotronics, inc.	Westerville, Ohio
Belcan Government Services	Albuquerque, NM	Leonardo S.P.A.	Arlington, VA
Blue Line Engineering	Colorado Springs, CO	Lester R. Summers, Inc.	Ephrata, PA
Cobham Semiconductor Solutions	Colorado Springs, CO	Linde Gas	La Porte, TX
Cobham Semiconductor Solutions	Plainview, NY	Lockheed Martin	Palo Alto, CA
Coherent, inc.	Richmond, CA	Lorr Company	Beltsville, MD
Composite Technology Development, inc.	Lafayette, CO	Magna Tool Inc.	Cypress, CA
Conceptual Analytics, LLC	Glenn Dale, MD	ManTech Nexolve Corporation	Huntsville, AL
Data Device Corporation	Bohemia, NY	Materion Corporation	Elmore, OH
Data Device Corporation	Poway, CA	Materion Corporation Mining Site	Topaz-Spor Mountains, UT
Dow-Key Microwave Corp.	Ventura, CA	MEI Technologies, inc.	Houston, TX
DXC Technology	Tysons, VA	Micro Instruments Corp	Rochester, NY
Dynavac	Hingham, MA	Microchip Technology Inc.	Chandler, AZ
Ellsworth Adhesive	Germantown, WI	Microsemi Corporation	Aliso Viejo, CA
Emerson Electric	St. Louis, MO	Microtel LLC	Greenbelt, MD
EnerSys - ABSL	Longmont, CO	Minco Products, inc.	Minneapolis, MN
Epner Technology	Brooklyn, NY	Minus K Technology	Inglewood, CA
General Dynamics	Cullman, AL	MOOG INC.	Chatsworth, CA
Genesis Engineering Solutions, Inc.	Lanham, MD	MOOG INC.	East Aurora, NY
Geodetics Systems, inc.	Melbourne, FL	Multek – Sheldahl Brand Material	Northfield, MN
Geologics Corporation	Alexandria, VA	NASA IV & V Facility	Fairmont, WV

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SUPPORTING SMALL BUSINESSES

at a Glance

NASA's AMES Research Center	Mountain View, CA	Southern Research	Birmingham, AL
NASA's Glenn Research Center	Cleveland, OH	Space Dynamics Laboratory	North Logan, UT
NASA's Jet Propulsion Laboratory	Pasadena, CA	Space Science Institute	Boulder, CO
NASA's Johnson Space Center	Houston, TX	Space Telescope Science Institute	Baltimore, MD
NASA's Marshall Space Flight Center	Huntsville, AL	Stinger Ghaffarian Technologies	Greenbelt, MD
National Institute of Standards and Technology	Gaithersburg, MD	Synopsys, inc.	Mountain View, CA
National Instrument Corporation	Austin, TX	Tavis Corporation	Mariposa, CA
NEA Electronics, inc.	Moorpark, CA	Tayco Engineering, inc.	Cypress, CA
Nelson Manufacturing Company	Ottawa, OH	TE Connectivity	Harrisburg, PA
NEO Technology Solutions	Chatsworth, CA	Teledyne Imaging Sensors	Camarillo, CA
Newark Element14	Chicago, IL	Texas A&M University	College Station, TX
Newport Corporation	Irvine, CA	The Bechdon Company, inc.	Upper Marlboro, MD
Next Intent	San Luis Obispo, CA	The Boeing Company	Chicago, IL
Nightsky Systems, Inc.	Baltimore, MD	The Catholic University of America	Washington D.C.
Northrop Grumman	Redondo Beach, CA	The Hammers Company, Inc.	Greenbelt, MD
Northrop Grumman (formerly Orbital ATK)	Commerce, CA	The Timken Company	Keene, NH
Northrop Grumman (formerly Orbital ATK)	Magna, UT	The University of Alabama in Huntsville	Huntsville, AL
Nu-Tek Precision Optical Corp	Aberdeen, MD.	Titanium Brazing, inc.	Columbus, OH
Numerical Precision, LLC	Wheeling, IL	TRAX International Corporation	Greenbelt, MD
Optical Solutions Inc.	Charlestown, NH	TRAX International Corporation	Las Vegas, NV
Park Aerospace Corp.	Newton, KS	Triplex Industries, inc.	Rochester, NY
Parsons	Pasadena, CA	U.S. Naval Research Laboratory	Washington D.C.
Positronic	Springfield, MO	Universities Space Research Association (USRA)	Columbia, MD
Precise Tool & Manufacturing Inc.	Rochester, NY	University of Arizona	Tucson, AZ
Precision Measurements and Instruments Corporation	Corvallis, OR	University of California, Davis	Davis, CA
Progressive Machine & Design	Victor, NY	University of Hawaii	Hilo, HI
Quantum Coating, Inc.	Moorestown, NJ	University of Hawaii	Honolulu, HI
Quartus Engineering Incorporated	San Diego, CA	University of Idaho	Moscow, ID
Quick Turn Circuit	Salt Lake City, UT	University of Maryland	College Park, MD
Raytheon Company	Aurora, CO	University of Rochester	Rochester, NY
Raytheon Company	Goleta, CA	UTC Aerospace Systems	Albuquerque, NM
Science Application International Corporation	Reston, VA	Vacco Industries, Inc.	South El Monte, CA
Science Systems and Application, inc.	Lanham, MD	Valcor Engineering Corporation	Springfield, NJ
SEAKR Engineering, inc.	Centennial, CO	ValveTech, inc.	Phelps, NY
Select Fabricators, inc.	Canandaigua, NY	Viavi Solution Inc.	Santa Rosa, CA
Sierra Lobo, inc.	Greenbelt, MD	Viewpoint Systems, inc.	Rochester, NY
Sigmadyne	Rochester, NY	W. L. Gore & Associates, Ltd.	Newark, DE
Smiths Interconnect Americans, inc.	Costa Mesa, CA	White Sands Missile Range	White Sand, NM
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A view of the entrance to low bay of the Vehicle Assembly Building (VAB) at NASA's Kennedy Space Center in Florida, during sunrise on January 19, 2022, with the Artemis banner above the door. Inside the VAB, NASA's Space Launch System and Orion spacecraft underwent final testing in preparation for the Agency's Artemis I flight test.

Credits: NASA/Cory Huston

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